NONPOINT SOURCE TIMES

Volume 10, Issue 1 2001

Lake Anasaguntic ook Boat Ramp Demo A Success

HARTFORD - A community effort to fix one of Lake Anasagunticook's most troublesome nonpoint source pollution sites, the boat ramp along Route 140, came together Oct. 21 under sparkling autumn skies.

The privately owned ramp serves as the lake's only public boat launch. It was one of 72 nonpoint source pollution sites identified in a 1998 survey of the Lake Anasagunticook watershed as posing a threat to water quality. The lake is a recreational gem and serves as the drinking water supply for Canton.

For years, boaters had maneuvered their trailers down the steep ramp to unload or retrieve boats. That was tricky enough, but the real challenge was getting back up to Route 140. Tires would spin on the dirt surface, slinging sand and gravel directly into the lake. In this way, the ramp, over the years, had been worn several feet deeper than the adjacent parking lot.

To make matters worse, storm runoff that raced down the ramp formed rills in the loose dirt surface that carried sediment to the lake.

In April, 2000, the Lake Anasagunticook Watershed BMP Demonstration Project got started with funds provided by the Maine DEP (through Sec. 319 of the Clean Water Act). Sponsored by the Oxford County Soil and Water Conservation District and supported by the Towns of Hartford and Canton, and an enthusiastic lake association, the project will build on the 1998 watershed survey by demonstrating erosion control at a variety of sites.

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Inside This Issue

NPS Times Starts it's 10th Year

Seems hard to believe the first NPS Times was printed in 1991. With the printing of this issue we start out 10th year.

Over the past 9 years the NPS program has grown at DEP from a staff of only 2 working on watershed issues to a whole Division in the Bureau of Land & Water Quality.

The 319 Grant program has increased from a program funded with less than a million dollars to over 2 million annually!

Many partnerships formed, watershed surveys completed, 319 projects funded and BMP's built all to protect and improve Maine's waters.

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The locally-led steering committee zeroed in on the Route 140 boat ramp. Not only was it an eroding mess, the committee felt the ramp would be a highly visible example of nonpoint source pollution control. Fortunately, the landowner was motivated to improve the site.

Pete Marcinuk, district conservationist for the U.S. Natural Resources Conservation Service in Oxford County, put a plan together. The plan called for bringing in fill material to raise the ramp, removing two large boulders from the ramp that drivers somehow dodged (if they didn't t, they could lose an axle), paving the upper 40 feet of the ramp, and installing concrete lock blocks the rest of the way (25 feet) down to the water.

The SWCD received a Permit By Rule from the DEP. Silt fence was set up to keep construction materials from entering the lake.

The Maine Department of Transportation partnered with the Oxford County SWCD to provide the paving, and the landowner donated materials to raise the grade of the ramp. Eight volunteers, plus SWCD staff, showed up Oct. 21 to install the 3 thick lock blocks. The blocks were chosen because they are easy for volunteers to carry (each weighs about 30 pounds) and put in place. Also, volunteers might want to use the blocks at their own sites in the future, so it was a good opportunity to learn how to use them. They cost $3.70 per square foot (not including shipping charges).

Within three hours, the volunteers had laid out the blocks (on geotextile fabric) and spread crushed rock over the blocks to fill in voids. The final result is a far cry from ugly, eroding scar that it replaced. Total grant cost is $2,200. The match (which includes materials, labor and paving) totals $2,292. A sign will be posted at the boat ramp to explain that it is a demonstration project. The site will be monitored to see how it stands up to use next summer.

Hopefully, in the grant's remaining two years, people will gain experience with erosion control methods at a variety of sites so that the community will be able to carry on conservation in the Lake Anasagunticook watershed for years to come.

In the meantime, one things for sure: Boaters will no longer have nightmares about the Route 140 boat ramp!

For more information contact Jeff Stern, District Manager, Oxford County Soil and Water Conservation District. Jeff can be contacted at (207) 743-5789.

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Yet as the most recent 305b report reminds us, there are still many water resources that are in need of improvement and others need protection.

Results of 4 years of telephone survey results indicate we also have lots of work to do in the public opinion/ knowledge realm. Although Maine resident's care deeply about the environment and water quality, they do not yet see themselves, as individuals, as being responsible for water quality.

As we have learned from each other, from ideas and projects shared through the NPS Times, the Maine Water Conference, MACD meetings and so on, the NPS pollution control program in Maine has become stronger and better.

As we enter the 10th year of the Times I would like to thank all those who have contributed and shared your projects and ideas! I would also like to encourage those who have yet to 'brag' or share their project, to share it with your colleagues. E-mail me your ideas, stories; whether the project worked or not. Lets celebrate the good work we are all doing. (kathy.m.hoppe@state.me.us)

Once again - Thanks to all of you who have contributed over the years, and those who have worked hard to improve the waters here in Maine.

Fish Brook Agricultural BMP Implementation Project & Watershed Survey

In a cooperative effort between state and federal agencies, the Maine DEP, Natural Resources Conservation Service (NRCS), and the Somerset County Soil and Water Conservation District (SCSWCD) have joined forces to implement a three-year project to help restore water quality in Fish Brook, a tributary of Messalonskee Stream located in Fairfield, Maine.

Fish Brook used to be a productive trout brook. Over years the brook has become polluted by excessive nutrient and sediment loadings and depletion of dissolved oxygen. The brook does not attain its Class B water quality standards. Fish Brook is scheduled for development of a TMDL (Total Maximum Daily Load) by the year 2003 and is designated as both a "NPS priority watershed" and a category #1 watershed in need of restoration. The primary cause is polluted runoff from animal feeding operations in the watershed. The project will provide one-on-one technical assistance to farmers for developing Nutrient Management Plans, and will significantly reduce sediment and phosphorus export from farm operations by implementing agricultural BMPs on five (5) farms in the watershed.

Pasture with livestock access to stream.

BMPs will include construction of concrete waste storage structures, heavy-use area protection pads, stabilized stream crossings, and stream buffers and fencing to protect stream channels and banks from soil disturbance by livestock. Soil loss reduction estimates will be provided by the NRCS as a means of assessing results and BMP performance. A watershed survey will be conducted by SCSWCD to identify and prioritize other potential agricultural and non-agricultural watershed NPS pollution sources.

The Fish Brook project ($419,624) is funded by the DEP NPS Grants Program (319 funds: $180,497), by the USDA-NRCS under its CRP and EQIP programs ($152,750), and with in-kind services and materials ($86,377) provided by SCSWCD, watershed volunteers, and local farmers. By leveraging the resources of agencies, programs, and individuals for maximum effect, this joint repair and restoration effort is an effective approach to targeting abatement NPS water pollution problems at the watershed level.

EPA NPS News Notes

Nonpoint Source News-Notes is Going Electronic. After 10 years of printing 14,000 copies per issue, News-Notes is finally entering the digital age! Only one more issue (#63) will be printed.

In order to better serve News-Notes subscribers and to save on printing costs, the producers of News-Notes are switching to electronic distribution of the newsletter. News-Notes is now available on EPA's web site at www.epa.gov/owow/info/NewsNotes in both pdf and html formats. You can also search through back issues using an online searchable database. You can search by keyword, date and issue, or by typing in your own search criteria.

A News-Notes listserver has been set up that will be used to announce the posting of each new issue on the web. It will also provide a table of contents of what articles are available as well as a short description of each article. To sign up for this listserver send an e-mail directly to: listserver@unixmail.rtpnc.epa.gov

In the body of the message type: subscribe News-Notes firstname lastname. Leave the subject line blank. Once subscribed, you will receive a welcome message explaining how the listserver works.

EPA Documents On the Web

The following documents are now available on the EPA Nonpoint Source website at http://www.epa.gov/owow/nps/lidlit.html This report, which was developed by EPA's Nonpoint Source Control Branch in cooperation with the Low Impact Development (LID) Center, contains a summary of the current monitoring and effectiveness data on LID practices and a brief overview of LID principles and programmatic issues such as application, ownership and cost. Four fact sheets describing local LID case studies are also available. The literature review and fact sheets were authored by Lisa Christ (EPA) in cooperation with Neil Weinstein of the Low Impact Development Center.

- Low Impact Development (LID) A Literature Review (PDF, 500kb) EPA Document # EPA-841-B-00-005
- Bioretention Applications, Inglewood Demonstration Project, Largo, MD and Florida Aquarium, Tampa, FL (PDF, 135kb) EPA Document # EPA 841-B-00-005A
- Field Evaluation of Permeable Pavements for Stormwater Management, Olympia, WA (PDF, 66kb) EPA Document # EPA 841-B-00-005B
- Street Storage for Combined Sewer Surcharge Control, Skokie and Wilmette, IL (PDF, 374kb) EPA Document # EPA 841-B-00-005C
- Vegetated Roof Cover, Philadelphia, PE (PDF, 153kb) EPA Document # EPA-841-B-00-005D

Additional guidance on LID practices is available at http://www.epa.gov/owow/nps/urban.html

Pond Group Tackles Pollution

(Editors note: The following was an article in the Lewiston Sun Journal regarding a 319 project.)

GREENE—Rebuilding a road isn't easy and it isn't cheap.

But the people who live on Allen Pond knew it was the right thing to do. So they set out to get it done. That was more than two years ago.

With help from a federal water quality grant, fund-raising and contributions from local property owners, the Allen Pond Improvement Association raised more than $17,000.

As a result, the reconstruction of Vermont Avenue - the single largest source of pollution to Allen Pond - is under way. The work should be complete within the next two weeks.

Formed in 1961, the Allen Pond Improvement Association is committed to protecting the water quality of the Greene pond.

When environmental studies revealed that erosion along the densely populated Vermont Avenue, which was completely washed out in a ferocious rainstorm in 1998, was threatening the health of the pond, the association decided to do something about it. Raising money for the roadwork became its top priority.

The construction is expected to cost about $23,000, said Katie Carville, an association member who helped organize the project along with her neighbor, Diane Dubois.

The work involves creating a crowned ditch along the side of the road that will collect water and redirect it to surrounding soil.

The association hired Bubier Construction, Inc. of Greene to do the work, but several people who live by the pond helped prepared for the project by clearing brush and doing other small tasks. The association received technical support from the Androscoggin Valley Soil and Water Conservation District and the Natural Resource Conservation Service.

The reconstruction of Vermont Avenue is one of several projects organized by the association. Work also is being done to improve West Shore Drive and several of the people who live on Vermont Avenue have formed their own association to study the conditions of the side roads to their street.

"Technically, this work is long overdo," Carville said. "It's great to come this far, but it is just the beginning."

Lchmelecki@sunjournal.com

Report: "Watershed Success Stories"

EPA WaterNews. 11/3/00. "On October 26, 2000, agencies cooperating under the Clean Water Action Plan released the 'Watershed Success Stories: Applying the Principles and Spirit of the Clean Water Action Plan.' The report highlights significant accomplishments in local community restoration efforts. These thirty success stories demonstrate how cooperation between federal, state and local partners can lead to innovative restoration solutions addressing a broad spectrum of water quality problems. Additional information and the report are available at http://www.cleanwater.gov under 'What's New.'"

2000-305b Report Submitted to EPA

The 2000 305b report has been submitted to EPA, and EPA will be commenting upon it.

The total length of rivers, streams, and brooks in Maine is estimated as 31,752 miles. It is estimated that 749 miles (2.4%) of Maine rivers, streams, and brooks do not fully support their assigned uses for one or more uses. For major rivers, approximately 70% of evaluated waters attain the fishable goal, while 94% are considered swimmable. A higher percentage of minor rivers, streams and brooks meet the fishable (98.7%) and swimmable (99.7%) goals.

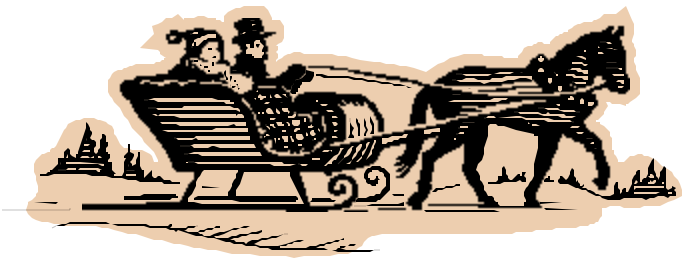
The total area of Maine lakes and ponds is estimated as 987,283 acres. Of this area, 76.8% fully supports designated uses other than fish consumption; 8.2% fully supports those uses but are threatened; and 15.1% partially supports the uses..

In regards to estuarine and marine waters, there are 201 closed shellfish areas reported, which is down from the 238 reported in the previous 305b report. The area of closure was approximately 167,015 acres, down from 210,600 acres reported in 1998. An additional 31,035 acres were conditionally opened, which is down from the 31,400 acres reported two years ago. At the end of 1999, prohibited and conditional or restricted areas encompassed approximately 198,050 of 1,825,000 (11%) of Maine tidal flats and waters.

No estimate exists for the percentage of groundwater not attaining its designated uses.

It should be noted that the State has a fish consumption advisory for all freshwaters because of mercury contamination.

For more information contact: Dave Courtemanch, Maine DEP 287-7789 or email; Dave.L.Courtemanch@state.me.us



What do trees have to do with it?

A new forestry guide for communities produced by the Maine Forest Service. The aprox. 55 page booklet covers a variety of topics including: Close-up examples of the effects of land use decisions, Forest & Natural Recourses Primer for planners, Guidelines for including Forest land in comprehensive land use plan, Resources and contacts.

For a copy or multiple copies contact Morton Moesswilde, Maine Forest Service (207) 287-8430 or morten.moesswilde@state.me.us

Lake Associations On the Web

Check out the new Citizens Action page on the DEP web site http://janus.state.me.us/dep/blwq/group.htm There, you will find many links to groups of concerned citizens who are working together to protect their favorite Maine resource. The newest link on this page is called "Lake Associations' Information Board". It lists lake associations by town. Kyle King, the Americorps volunteer who has been working at DEP and VLMP since May, contacted many lake associations to create this page. He has included some tidbits of information that he thought would be of interest. Check it out!

The web page was developed with the intent that it would be updated annually to strengthen lines of communication with lake associations statewide. It is important to keep the DEP updated with current contact name, address, email address and telephone number for your lake association. DEP will not publish these names or contact information but will refer people who express an interest in your lake association.

Lake association activities and/or accomplishments could be posted on the web page under the column titled, "Information". The DEP expects the web page will help generate new lake association members. Ultimately, the web page can stimulate an exchange of ideas and resources between lake associations, especially for fledgling lake groups who may be inspired by the accomplishments of a more established organization.

Christine Smith, 287-7734, christine.p.smith@state.me.us

Storm Drain Stenciling

The wonderful thing about storm drain stenciling projects is that the concept is simple, straightforward and effective. After only a few hours of work on a sunny day, volunteers can feel--and see--that they have made significant progress in getting an important message out to their community. Best of all, the message of "DRAINS TO RIVER, PROTECT YOUR WATER" will last as long as the paint lasts on the pavement—1 to 3 years—reminding everyone who passes to be conscientious and mindful of how their own activities affect water quality.

The following are some thoughts and suggestions I have for community groups who may be interested in doing this simple project in their own towns. I am basing my comments on our experience in Houlton this past summer, which was overwhelmingly successful and positive.

There are two components to any storm drain stenciling project: educating the community about why you are drawing attention to storm drains and the actual stenciling. Included in this article I will emphasize here only the points I found particularly important for us as we went about planning and doing our project.

Raising community awareness

Informing the community about the larger meaning behind the simple message that goes next to storm drains is just as important as the actual stenciling. Do as much as you can to get the word out through the local newspapers, TV stations, radio, community groups, etc. Also have flyers ready to pass out to people should you meet any curious onlookers on the day of the activity. Schools are great resources and a good place to start with your educational efforts.

"Best of all, the message 'Drains to River, Protect Your Water' will last as long as the paint lasts on the pavement—1-3 years."

Stenciling logistics

Before you begin planning for the activity, be sure to obtain permission from your town (town manager) and your town's public works department. The town of Houlton was very supportive of our project and they provided us with safety cones and vests. If you plan early enough and your town is supportive of the idea, you may even persuade your town to include the costs of storm drain stenciling into their annual budget (for paint and stencils). In any case, I was able to get maps of all the town's storm drains from the public works department as well as very good suggestions on which routes we should stencil.

Paint

The kind of paint you want to use is water-based latex, aerosol, inverted tip striping paint (comes in cans). This is what the DOT uses on the roads. In fact, we were able to get a donation of 20 cans from the DOT in Augusta (Burt Ladd). We guessed, conservatively, that we'd need about 20-25 cans of paint for 200 stencils. As it turned out, our stencils were much smaller than what they would have been if we'd bought them so we used only 6 cans of paint for about 300 stencils.

You can either raise enough money to buy the paint yourselves, or you can solicit donations from community groups or local companies (we got a generous donation from A. E. Staley Co. also). I don't know what Burt Ladd would think if a whole lot of stenciling groups started knocking on the DOT door for donations, but he was very friendly and helpful, and perhaps he has other suggestions. In any case, the paint is available at local hardware stores as well as places like Sherwin-Williams.

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Maine Water Conference 2001

DEADLINE: Call for Titles - December 15, 2000

Conference: May 3, 2001 - Augusta Civic Center

The MWC Organization Committee is seeking titles for oral presentations in the following proposed sessions. Please send a title and no more than a few sentences describing your presentation to: MWC Organization Committee, Senator George J. Mitchell Center, University of Maine, Orono, ME 04469.

Session Topics:
- Drinking Water and Health & Source Water Assessment Program
- Stream and River Quality
- Water Contamination and Remediation
- Atmospheric Deposition and Water Quality
- How Wetlands Work?
- Poster Session - Misc. Topics & Student Projects

For more information contact the MWC Organization Committee at:

MWC Organization Committee, Senator George J. Mitchell Center, University of Maine, Orono, ME 04469 tel: 207/581-3244 fax: 207/581-3290 e-mail: WRILINES@maine.edu

DEADLINE: Call for Titles - December 15, 2000

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Stencils

You can buy stencils, make them yourselves or have them donated. Again, schools would probably be a good resource in this area, as many high schools have shop classes and therefore have the tools you need to make stencils. We were lucky enough to have our stencils donated by A. E. Staley Co. However, one problem we ran into was that not only were the stencils very small, but they were made of a thin cardboard that did not last beyond a dozen or so stencils (though with a practiced hand, they were good for at least 40 or 50 before we had to clean them off). Materials you may consider using when making your stencils are mylar, cardboard, 1/8" pressboard, sheet metal, etc. If the material is sturdy and flexible, then the stencils can be cleaned and re-used many times.

Recruiting volunteers

As with most projects that involve volunteers, this is perhaps one of the trickiest parts of the project to manage. Whether your volunteers are adults or students, the best way to get them excited and committed to the project is if they fully understand why it's important for them to be engaged in educating their communities about storm drains and what goes into them (or *shouldn't* go into them!). This is a great project for students (middle school or older), lake associations, stream teams, retired people, etc. People may be sick the day of the event, forget, change their minds, etc. For this reason, it's very important to have constant contact with potential volunteers, to explain the project and their responsibilities clearly and to involve them in the planning/decision making process. Be sure to make them feel valued and confident about their tasks. Thank you letters and gestures are extremely important.

Thinking ahead

After you've planned your route out on paper, do drive—or bike—the planned routes before the day of the stenciling. This helps you figure out how many storm drains there actually are, anticipate any possible safety concerns along each route, as well as what area can be realistically covered in the time you've set aside for stenciling (generally 3-4 hours). We had four volunteers per group, which worked out very well. The stenciling went much more quickly than we expected. We had allowed 5-10 minutes per storm drain, but in reality, it only took 12 of us about 2 hours to cover 200 drains. By the end of the morning, we had covered much more ground than we had planned.

Safety

Be sure to take all precautions: wear safety vests, goggles (sunglasses suffice) and gloves and set up safety cones around stenciling volunteers. Include adults in all groups with students. Avoid very large or busy roads when planning your routes. Remind people to use their common sense!

Good luck with your project and have fun!

Regina Wei--AmeriCorps Volunteer Leader, DEP Presque Isle. Regina can be reached at (207) 764-0477 until December 15th.

Vermont to Increase Research on NPS Effects on Frogs

EPA Gives Vermont $100,000 for Increased Frog Research 11/9/00. The Vermont Agency of Natural Resources (VTANR) was selected to receive a $100,000 EPA grant to expand research on how Vermont's frogs may be affected by pollution from agriculture, storm water sewers and other land use. Vermont is one of the nation's "hotspots" for amphibian deformities, and frogs in the state are the subject of a recent National Wildlife Federation (NWF) study about the effects of pollution on abnormalities and declining populations. Results of the NWF study underscore the urgent need for more information. NWF's Northeast Natural Resource Center produced the report entitled, Frogs in a Fix II: Recommendations to Address Frog Abnormalities in Vermont and collected over 1,200 frogs at more than 60 sites around the state including farm ponds, urban storm water, agricultural land and golf courses. NWF's report identifies a five-part solution that includes conserving habitat; supporting long-term monitoring of amphibian populations; encouraging golf courses to consider "greener" land management methods; implementing stronger regulation over the use of pesticides and other toxic substances; and investigating the affects of commercial harvesting of frogs in Vermont. The NWF report is located at http://www.nwf.org/watersheds/frogsreport.html.

For those of you who haven't checked out the Clean Water Action Plan website in a while, you might take a look to view the new "Watershed Success Stories"; at least some of them have 319 dollars in them and you may recognize the project as one of your own. See www.cleanwater.gov/success. You can easily view any specific project you want or download the whole 68-page document.

The new, final Unified Federal Policy is also up on the Web site.

Protecting Highland Lake

Like many lakes in Southern Maine, Highland Lake has experienced a long history of adverse watershed development patterns. While it's water is considered good, the lake is seriously threatened by stormwater runoff and is especially sensitive to increases in phosphorus. These concerns prompted the Lakes Environmental Association (LEA), a nonprofit conservation group, to carry out a Section 319 project to control and reduce pollution impacts to the lake. This intense, three-year watershed project yielded many positive outcomes. LEA developed a GIS-based method to facilitate the analysis of pre- and post-BMP construction conditions. This analysis showed that phosphorus loading has been substantially reduced through the construction of best management practices (BMPs). As work in this watershed continues, area residents and lake recreational users have reason to be more optimistic about the lake's future.

Highland Lake is a picturesque, blue water lake situated in the foothills of the White Mountains of western Maine. The 1300-acre lake serves as the centerpiece for the Town of Bridgton, Maine. The watershed was developed in stages - the expansive farm fields of the 1800's gave way to reforestation and second homes in an odd combination of old land uses and new development patterns. Since the early 1900's, ten miles of shoreline frontage have been developed. Access roads were designed and built at a time when eroding roads were not believed to be pollution sources. Although much of the land remains forested, GIS studies showed that existing developed areas accounted for 70% of the phosphorus reaching the lake.

The development patterns have affected the lake's water quality. Currently, LEA considers the lake at risk to develop algal blooms. Long-term monitoring data indicate the lake is threatened with gradual declines in water clarity and dissolved oxygen. A persistent loss of oxygen would reduce or eliminate trout habitat. In the lake's deeper waters, phosphorus is re-cycling in the bottom sediments. Increases in phosphorus levels could lead to significant declines in water quality and aquatic habitat. Reductions in water quality could lead to financial problems, as well. Recent studies by the University of Maine and the Maine Department of Environmental Protection (DEP), show a direct relationship between high lake water clarity and higher property values. Concerns have been raised that property values along Highland Lake's shoreline, currently valued at $17,000,000, could decrease if the lake's water quality worsens.

These indicators provided compelling justification for a watershed-wide effort to identify and correct the most pressing erosion problems. As a first step, LEA used DEP's phosphorus loading methodology to determine a phosphorus reduction goal for the watershed. It was estimated that a reduction of 50 pounds of phosphorus per year would result in a visible and noticeable improvement in water quality. LEA then used GIS technology and it's "Phosphorus Hotspots Model," to assess the watershed. The model overlays land use information (GIS coverage) with phosphorus export coefficients for each land use adjusted for soil type, slope, and zones of proximity to the lakeshore or shorelines of tributaries. "Our model represents an automated way of applying common sense principles of phosphorus export in order to better understand the effects of a watershed's land use patterns on water quality,"

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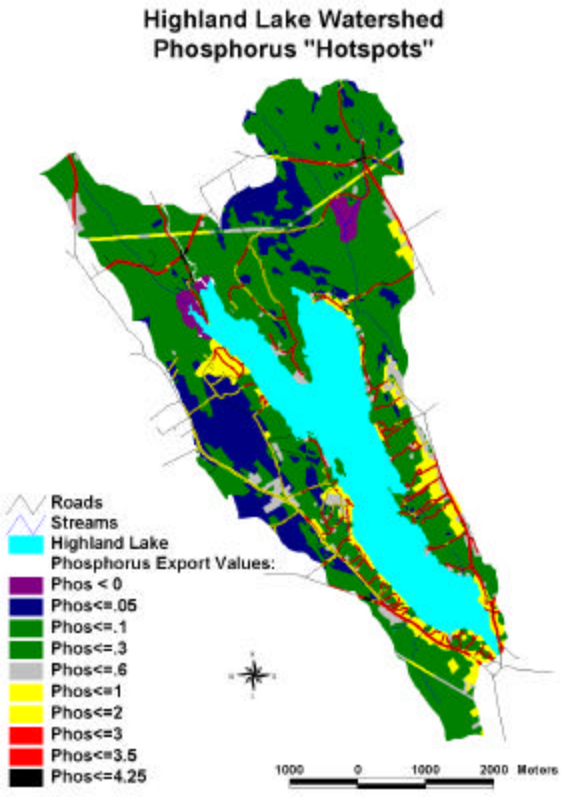

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explained Peter Lowell, Executive Director of LEA.

As an adjunct to this method, LEA conducted a field survey of secondary roads under "deluge-like" storm conditions. Seeing areas under a worst-case scenario helped to identify erosion sites and offered ideas as to which BMPs would be most effective.

The 319 project was carried-out from January, 1997 to March, 2000. The total watershed project budget was $185,500 which included $80,500 in EPA funds and an impressive $105,000 in non-federal matching funds. Throughout the project, LEA collaborated with volunteers and key organizations, especially Portland Water District and DeLuca-Hoffman Associates, along with the Town of Bridgton, the Town of Sweden, Maine DEP and EPA. LEA worked with their partners to encourage, design and construct "fixes" using the multi-faceted approach described below:

- "Clean Lakes Check-Up" Program - Under this innovative program, LEA assisted property owners with a wide range of storm water runoff and erosion problems. Upon request, LEA conducted site visits and developed field reports and detailed erosion control plans. In total, 42 Clean Lake Check Ups were performed.
- BMP Construction - BMPs were installed and demonstrated at 19 key site locations. LEA worked closely with contractors on a variety of sediment problems related to roads and riparian buffers.
- Erosion Control Workshops - Over three seasons, workshops were held on camp road maintenance, shoreline buffer strips and a wide range of erosion control techniques.
- Contractor Certification - LEA and Maine DEP staff provided training on the latest erosion control techniques to earth-moving contractors. Seventeen (17) contractors received certification.
- Assistance to Code Enforcement Officers - LEA worked closely with the CEO from the Town of Bridgton to prevent and address shoreline violations. Three-quarters of the watershed lies within the Town of Bridgton.

After the BMPs were installed, LEA recalculated the Hotspots maps in consultation with engineering staff from Deluca-Hoffman Associates. The difference between the pre-construction and post-construction phosphorus export represented the reduction in phosphorus export as a result of BMP construction. It was found that BMPs installed under this one project accounted for a reduction of 14.3 pounds of phosphorus. LEA will continue to work with the community on a long-term program to achieve phosphorus reductions closer to the 50 pounds per year goal.

LEA, Maine DEP and EPA New England are encouraged with the overall results of the Highland Lake project. In April, 2000, EPA New England presented LEA with an EPA Merit Award for it's thirty year history of exceptional work and its efforts on the Highland Lake project. Peter Lowell recapped the project's success, "The Project significantly raised awareness among all interest groups in the watershed. The ability to quantify the water quality impact of BMPs will continue to be a powerful tool in encouraging ongoing efforts to protect this lake and many others."

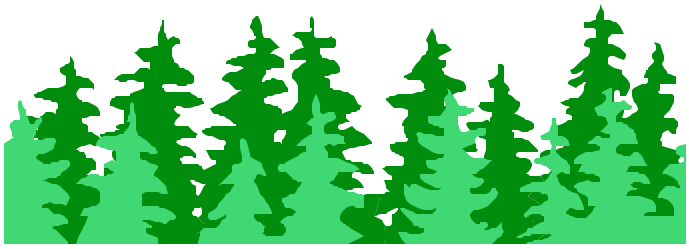
Stream Teams - Now in Maine

The Division of Watershed Management is beginning a new program entitled the Maine Stream Team Program (MSTP). Funding for the initial pilot phase of the program is being provided through an EPA 319 (NPS) grant.

The primary goals of the program are to promote citizen stewardship of stream resources and to foster networking and partnership among these stewardship groups. The main marketing technique will be to mail or hand out copies of a newly-created MSTP registration package. The package provides information about the program and a way for a person (and their friends or family) to register themselves as a "stream team" (a stream team is a group of who people who have banded together to promote stewardship of their local stream).

Registered teams will receive a package of information that will help them get started (including basic information about streams, useful phone numbers, listings of education and training materials available from the program, ideas for getting started on stewardship projects, etc.).

For more information contact: Jeff Varricchione, Maine DEP, Southern Maine Regional Office, (207) 822-6317 or email: Jeff.Varricchione@state.me.us



Watershed Improvement Financial Assistance Partnership

The *Watershed Improvement Financial Assistance Partnership* (WIFAP) provides financial assistance to help Maine Soil and Water Conservation Districts conduct nonpoint water pollution control projects to restore or protect lakes, streams, or coastal waters that are polluted or considered threatened. WIFAP funding is from the Environmental Protection Agency ($240,000) administered by the Maine Department of Environmental Protection (MDEP) and State of Maine general fund ($160,000) administered by the Maine Department of Agriculture, Food, & Rural Resources (DAFRR). EPA-New England and the Maine Association of Conservation Districts (MACD) are cooperating partners. Maine's 16 Districts joined together into 4 watershed regions for this program. Annually each region is eligible to receive a grant of $100,000.

Southwestern Conservation Alliance	Kennebec Watershed Conservation Districts
Aroostook County	Downeast - Penobscot Watersheds

WIFAP 2000 - Project Summary Descriptions prepared by DEP, 11/15/00

Southwestern Conservation Alliance: *Contract Effective Date 10/23/00*

#2000R-40, "Mousam Lake Water Quality Improvement Project"
Sponsor: York County SWCD
Purpose: To reduce soil erosion and polluted runoff sources to Mousam Lake by: providing technical assistance to at least 15 landowners and installing erosion controls at 30 road and residential sites; cost-sharing with landowners to correct erosion sources; creating a Youth Conservation Corps to help effect repairs and involve local residents; and to promote conservation practices using newsletters, workshops, tours, and other outreach efforts. Pollutant load reduction will be estimated by soil loss avoidance calculations.
Duration: 16 months,
Funding: 319: 60,000 + State: 40,000 + Local match: 25,015 = Total: $125,015

Kennebec Watershed Conservation Districts: *Contract Effective Date 10/23/00*

#2000R-42, "Ducktrap River Tributary Restoration Project"
Sponsor: Waldo SWCD
Purpose: Reduce sediment entering the Ducktrap River by using bio-engineered plantings, rip rap, and plunge pools to restore about 1750 feet of a tributary stream. The stream restoration will stop significant gulley erosion and reduce sedimentation of the high value Atlantic Salmon spawning and nursery habitat that is immediately down stream in the Ducktrap River. NRCS will provide before and after estimates of the amount of soil loss in the streambed and sediment entering the Ducktrap River from the stream.
Duration: 24 months
Funding: 319: 60,000 + State: 40,000 + Local match: 21,040 = Total: $121,040

Downeast / Penobscot Watersheds: *pending*

#2000R-41A Pollutant Load Reduction, Narraguagus River @ Cherryfield)
Sponsor: Washington Cty SWCD
Purpose: Implement conservation practices to abate erosion and sedimentation at about 9 sites to effectively reduce polluted runoff that is degrading Atlantic Salmon spawning and rearing habitat in the Narraguagus River in the Cherryfield area. Estimated annual soil loss

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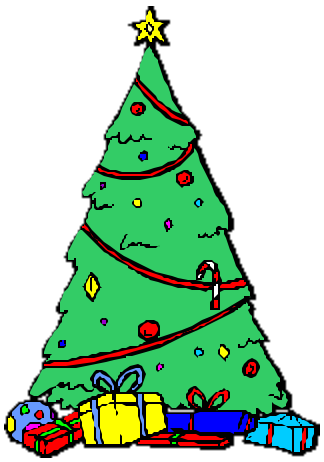
Biodiversity Web Site for Students

Intel and Conservation International Launch Investigate Biodiversity, A Virtual Mentoring Web Site for Young Scientists

WASHINGTON, Sept. 14 / PRNewswire/ -- Conservation International and Intel Corporation today announced the launch of Investigate Biodiversity (www.conservation.org/investigate), a web site that harnesses the interactivity of the Internet to excite and educate students about conservation science. Through this new web site, science students and teachers are transported to remote locations to experience an insider's view of science in action, while learning first-hand tools and techniques that can be applied in their own backyards.



(Continued from page 10)
calculations show that this project will prevent total soil loss of more than 115 tons per year. Indigenous Atlantic salmon are considered threatened in the Narraguagus river system. The river is designated in the: (a) "Maine Atlantic Salmon Conservation Plan for Seven Maine Rivers" (March, 1997) as one of 7 rivers with a distinct population segment of Atlantic salmon that is considered threatened; and (2) "Maine Nonpoint Source Priority Watershed List" as a high priority river because Atlantic salmon is considered threatened.
Duration: 12 months
Funding: 319: 46,200 + State: 30,800 + Local match: 9,000 = Total: $86,000

#2000R-41B Smelt Cove Shellfish Restoration Project
Sponsor: Washington County & Hancock County SWCDs
Purpose: Eliminate the impact of an identified non-point source pollution risk (livestock farm) affecting approximately 113 acres of productive shellfish harvest area (soft shell clams) in Smelt Cove and Flanders Bay in the Town of Sullivan. For over 10 years this harvest area has been classified prohibited to shellfish harvesting based on failing National Shellfish Sanitation Program standards that include persistent elevated fecal coliform bacteria levels. A shoreline survey has identified the farm as among the most probable sources of pollution. Remediation of this known pollution source, to include significant improvement of the agricultural BMPs used at the farm, should contribute to improvements in the water quality of Smelt Brook and Flanders Bay with possible reclassification (opening) of the shellfish harvesting area.
Duration: 18 months
Funding: 319: 13,800 + State: 9,800 + Local match: 4,400 = Total: $28,000

Aroostook Region: *pending*

#2000R-43A, "Unnamed Brook, Prestile Stream Pollutant Load Reduction"
Sponsor: Central Aroostook County SWCD
Purpose: (a) Abate export of nutrients and sediments from potato cropland within 450 acre watershed into an unnamed brook tributary of Prestile Stream; (b) demonstrate use of site-specific agricultural conservation practices on potato cropland. This will demonstrate the utility of the NRCS conservation practice tech note #N4, "Nutrient and Sediment Control Systems" to trap pollutants; and (c) help promote local watershed stewardship to prompt landowners to apply similar agricultural BMPs on their lands in order to begin restoration of the Prestile Stream watershed. A 21 mile segment of Prestile Stream (Easton to Mars Hill) does not attain the standards for the assigned classification, Class A. This project will also be used to promote the development of a locally-supported Watershed Management Plan for the Prestile Stream watershed. NPS load reduction estimates (phosphorus & soil loss avoided) estimates will be completed.
Duration: 16 months
Funding: 319: 48,000 + State: 37,000 + Local match: tbd = Total tbd

#2000R-43B S. Perley Brook Restoration Project: Phase I, NPS Watershed Survey
Sponsor: Central Aroostook County SWCD & St. John Valley SWCD
Purpose: The water quality of Perley Brook is considered threatened with not meeting water quality standards. Demonstrating the restoration of a tributary brook is intended to help generate actions in the future to restore other tributaries of Perley Brook. Phase I will involve: (a) NPS watershed survey of a tributary of S. Perley Brook to inventory nonpoint sources occurring in watershed; (b) a development of a plan to implement solutions; and (c) informing landowners about practical best management practices they can use to help improve the brook. Phase II will involve the implementation of solutions, "BMPs" after completion of Phase I provided funding is available.
Duration: 12 months
Funding: 319: 12,000 + State: 3,000 + Local: 0 = Total: $15,000

Catalog of Funding Sources For Watershed Protection

EPA just did a reprinting of the Catalog of Federal Funding Sources for Watershed Protection (Second Edition), Dec. 1999, EPA 841-B-99-003. The document is available on Internet at:

http://www.epa.gov/OWOW/watershed/wacademy/fund.html>

Don't Forget to check out the Nonpoint Source Training Center's Winter/Spring Schedule at:

http://janus.state.me.us/dep/blwq/training/nps.htm

What is Outreach Education?

A first step is understanding the difference between providing information and engaging in education.

Information is not education, although education can't take place without information. Outreach education relies on the existence of a body of knowledge which is not only transferred to the individual but is instrumental in transforming the individual. In other words, the individual has to actively receive the knowledge and know how to use it.

Two research areas give some general guidance in accomplishing this transformation. Behavior Change research focuses on promoting action through teaching ideal behaviors and environmental practices. An *ideal behavior* is a single, observable action that a person must perform to reduce or help resolve a specific environmental problem. It should be determined by experts. An environmental practice is a series of several related behaviors that, together, could affect the environmental problem.

Diffusion of Innovation research looks at the process involved in how and why people adopt technical innovations. It describes the roles of innovators (a US EPS environmental health researcher for example), diffusers (such as outreach educators or community leaders), and potent ional adopters (those who could benefit from the innovation). Together they must communicate to understand: 1) the innovation; 2) how and why it works; and 3) its advantages, disadvantages, and consequences in *specific situations*.

Research shows that innovation diffuse faster (are adopted more quickly) if they are perceived as having:

- A relative advantage over other methods in terms of economics, convenience, social prestige, or satisfaction.
- High compatibility with the existing values, past experiences, and needs of potential adopters.
- Low complexity.
- High "trial-ability" before commitment is required.
- High visibility to other potential adopters.

Successful outreach programs use this model and adapt their information and methods to meet the needs and perceptions of the potential adopters.

The innovation process includes several levels of commitment and action. Potential adopters may begin at any one and will move among them freely. These are:

- Knowing that the innovation exists and how it functions.
- Forming a favorable or unfavorable attitude toward the innovation.
- Engaging in activities that lead to a choice to adopt or reject the innovation.
- Putting the innovation into use and perhaps adapting it to specific needs.
- Seeking reinforcement of an innovation decision already made or reversing a former decision.

(This is an excerpt from a US EPS Coop. Extension Partnership paper Number 7)

Subsurface Wastewater Disposal Project–Huge Success

In September, 2000 the Code Enforcement Officer Training and Certification Program concluded a round of training session covering the *Identification of Improper Installation of Subsurface Wastewater Systems and Associated Environmental Concerns.* The object of this training was to offer Local Plumbing Inspectors (LPIs) instruction on the proper techniques of installing septic systems and an insight to the detrimental effects improperly installed systems can have on soils, ground water and other natural resources.

The session consisted of 4 different types of septic fields and erosion control measures installed on a donated piece of land at Highmoor Farms in Monmouth. Participants rotated in groups between the stations reviewing HHE 200 septic system forms and evaluating the septic system installations to determine errors and deficiencies. Since this was a pilot project for the State of Maine, the program was in hopes that it would prove a viable method of training. We far exceeded our expectations!

The workshop was offered four separate days at Highmoor Farms in Monmouth with over 165 individuals in attendance. Attendees rated the session as excellent to very good and its importance from very important to important. This demonstration project will be in place for a five year period and the program expects 300+ LPIs be trained at this site. The on-site "real world" nature of this project has drawn interest from other profession such as contractors, real estate agents, site evaluators as well as private citizens. The Program will coordinate with these groups to arrange training sessions.

Staff from the Departments of Health Engineering, Environmental Protection and Agriculture contributed to this effort. Special thanks go to David Rocque, State Soils Scientist. A grant from the Maine Outdoor Heritage Fund and funding from the Maine Coastal Program supported this project. For more information contact Lana Clough at the State Planning Office, Code Enforcement Training and Certification Program, (207) 287-8056 or at lana.clough@state.me.us

Calendar of Events

February 5-9, 2001. International Erosion Control Association 32nd Annual Conference and Expo. Rio Suite Hotel & Convention Center, Las Vegas, Nevada. F.M.I. Call (970) 879-3010 or www.ieca.org

March 2001. SPO's DEP training will focus on Floodplain Management. F.M.I. The State Planning Office (207) 297-1471

May 3, 2001. Maine Water Conference. Augusta. FMI MWC Organization Committee, Senator George J. Mitchell Center, UMO (207) 581-3244 or WRILINES@maine.edu

May 15-17, 2001. 2nd National Conference: NPS Pollution Information & Education Programs. Chicago Botanic Garden, Glencoe, Illinois. FMI Bob Kirschner, (847) 835-6837 or bkirshn@chicagobotanic.org

May 18, 2001. Southern Maine Children's Water Festival. F.M.I. Marianne Dubois, Maine DEP (207) 287-2115.

Resources Available

The Clean Water Act TMDL Program: Law, Policy, and Implementation. A new guide on TMDL's by Oliver A. Houck a Tulane Law Professor sponsored by the Environmental Law Institute. $39.95 FMI 1-800-433-5120 or www.eli.org

Stormwater: The Journal for Surface Water Quality Professionals. A new publication by Forester. F.M.I. (805) 681-1330 or publisher@forester.net, www.forester.net

What do trees have to do with it? A forestry Guide for Communities. A new publication by the Maine Dept. of Conservation, Maine Forest Service. For copies or more information on this contact Morten Moesswilde at (207) 287-8430 or morten.moesswilde@state.me.us

Web Sites of Interest

Minnesota has developed a watershed game for kids off the internet. Check it out! http://www1.umn.edu/bellmuse/mnideals/watershed/watershed2.html

On September 20, the U.S. Geological Survey launched a web site with a data warehouse of water quality data for 46 states. USGS Water Quality Data Warehouse: http://infotrek.er.usgs.gov/pls/nawqa/nawqa.home

Here is a neat site on yard landscaping http://www.acb-online.org/BAYSCAPE.PDF

This newsletter is prepared especially of those involved in nonpoint source pollution issues. It is funded through an EPA 319 Clean Water Act Grant. If you have any announcements, comments or items for the Nonpoint Source Times, or if you would like to be added to the mailing list, please call or write:

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Clean water starts with you!

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